

# Work Order ID 117437

April-24-14 11:08:32 AM

**\*117437\***

Page 1

Item ID: D2580-1

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: 205 Bent Tube

Start Date: 5/07/14 Start Qty: 6.00

**\*6\***

Cust Item ID:

Required Date: 5/07/14 Req'd Qty: 6.00

**\*6\***

Customer:

Reference:

Approvals: Process Plan: MLJ Date: 14-04-24

Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

QC: \_\_\_\_\_ Date: \_\_\_\_\_

SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D2580	F								

100

0.00

**\*100\***

Skid tubes

Skid tubes

Memo

0.00

1- Inspect mat'l D2500-1-190 for damage.

2-Drill pilot holes using drill jig DT 8149 A-BC-D

3-Open holes to 0.508" as per Dwg D2580

4-Debur holes per QSI002 section 4.2.3 and blow out all chips from inside of tube

5- Test fit inspection saddles on FWD & AFT saddle holes using DT9916.

101

QC6- Inspect dimensions to drawing

0.00

**\*101\***

QC

Memo

0.00

Quality Control

DAS  
03  
9-89

14-5-8 JLD  
14-5-9

# Work Order ID 117437

April-24-14 11:08:32 AM

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Page 2

Item ID: D2580-1

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: 205 Bent Tube

Start Date: 5/07/14 Start Qty: 6.00 **\*6\***

Cust Item ID:

Required Date: 5/07/14 Req'd Qty: 6.00 **\*6\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
110	Chemical Conversion Coat per QSI005 4.1	0.00							
<b>*110*</b>									
HandFinish	Memo	0.00							
Hand Finishing									
120	QC7-Inspect Chemical Conversion Coat	0.00							
<b>*120*</b>									
QC	Memo	0.00							
Quality Control									
125		0.00							
<b>*125*</b>									
Skidtubes									
Skidtubes	Memo	0.00							

Memo

1- Bond web in place per QSI 015.

A/R Sikaflex-291 batch: 28026  
Sikaflex expire date: 14-10-09  
Start time and date: 10:05 bond for 12hrs

DAS  
18  
9-09

14-5-9

**Work Order ID 117437**

April-24-14 11:08:32 AM

**\*117437\***

Page 3

Item ID: D2580-1

Revision ID:

Item Name: 205 Bent Tube

Start Date: 5/07/14

Start Qty: 6.00

**\*6\***

Required Date: 5/07/14

Req'd Qty: 6.00

**\*6\***

Reference:

Accept

**\*N900040100\***

Setup Start

**\*NS1\***

Stop

**\*NS2\***

Cust Item ID:

Customer:

Approvals:

Process Plan: \_\_\_\_\_

Date: \_\_\_\_\_

Tooling: \_\_\_\_\_

Date: \_\_\_\_\_

Run Start

**\*NR1\***

Stop

**\*NR2\***

QC: \_\_\_\_\_

Date: \_\_\_\_\_

SPC (Y/N): \_\_\_\_\_

Date: \_\_\_\_\_

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

130

QC5- Inspect part completeness to step on W/O

0.00

**\*130\***

QC

Memo

0.00

Quality Control

DAS  
03  
9-89

DD 14-5-12

140

Identify as per dwg & Stock Location: L/6

0.00

**\*140\***

Packaging

Memo

0.00

Packaging

DEC 14-5-12

150

QC21- Final Inspection - Work Order Release

0.00

**\*150\***

QC

Memo

0.00

Quality Control

MCS 14-05-12

ME 14-5-12

# Picklist Print

April-24-14 11:08:31 AM

Page 1

Work Order ID: 117437

**\*117437\***

Parent Item: D2580-1

**\*D2580-1\***

Parent Item Name: 205 Bent Tube

Start Date: 5/07/14

Required Date: 5/07/14

Start Qty: 6.00

Required Qty: 6.00

Comments: IPP B01.11.08 Revised Step 9, 10, 12, and 13 SM IPP Rev:C  
10.12.01 as per DEO D1 DD verf:ec

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D2500-1-190

Manufactured

No

100

Each

42.0000

1

6

**\*D2500-1-190\***

Ext'n -I' Beam Tube 4"

**\*\***

Location

Loc Qty

Loc Code

HALL

42

105279

42

D2596

Manufactured

No

100

Each

10.0000

1

6

**\*D2596\***

Web, 205 Skidtube

**\*\***

Location

Loc Qty

Loc Code

LG002

10

109898

4

115023

6

117437

14-5-8 JLG  
14-5-9/DGC

LIST OF MATERIALS					
ITEM	QTY -041	QTY -045	QTY -047	PART NUMBER	DESCRIPTION
1	X			D2580-041	SKIDTUBE ASSEMBLY
2		X		D2580-045	SKIDTUBE ASSEMBLY
3			X	D2580-047	SKIDTUBE ASSEMBLY
4	1	1	1	D2500-1-190	EXTRUSION
5			16	D2570	BUSHING
6	1	1	1	D2576-3	STEP
7		4		D2579	SPACER
8	16	16	8	D2594-1	PLUG
9	16	16	8	D2594-3	O-RING
10	1	1	1	D2596	205 WEB
11	1	1	1	D2855	AFT CAP
12	1	1		D3564-5	WEARSHOE
13	1	1		D3564-9	WEARSHOE
14	1	1		D3564-11	WEARSHOE
15	1	1		D3564-13	WEARSHOE
16	2	2		D3566-1	GASKET
17	1	1		D3566-5	GASKET
18	1	1		D3566-13	GASKET
19	20	20	24	D4202-1	SPACER
20			1	D4406-041	WEARPLATE ASSEMBLY
21			1	D4406-043	WEARPLATE ASSEMBLY
22	50	50		ALS7-1032-130 or AKS7-1032-130 or AKS4-1032-130 or AELS-1032-130	INSERT
23	50	50		AN3C4A	BOLT
24	2	2	2	AN3-5A	BOLT
25			8	AN4-45A	BOLT
26	50	50		NAS1149C0332R	WASHER (AN960C10L)
27	2	2	2	NAS1149D0332J	WASHER (AN960JD10L)
28			8	MS21042-4	NUT (OR MS21042L4)

# **GENERAL NOTES:**

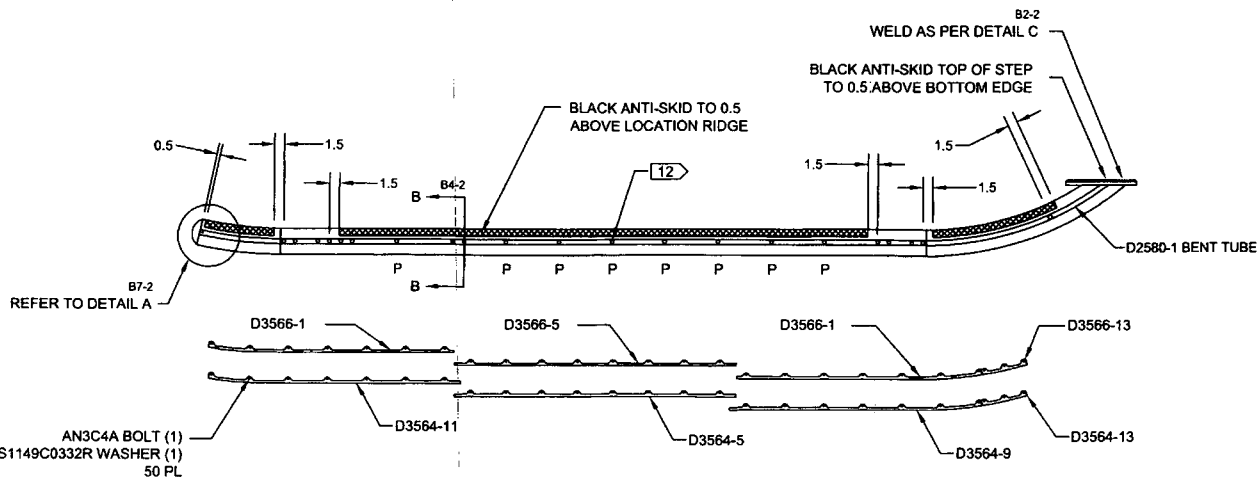
- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB  
POWDER COAT ASSEMBLY (-041/-047) GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3  
POWDER COAT ASSEMBLY (-045) GREEN SANDEX (REF 4.3.5.8) PER DART QSI 005 4.3  
BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4.
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: D2580-041 = 34.5 lbs  
D2580-045 = 34.5 lbs  
D2580-047 = 37.7 lbs
- 8) WELDING PER DART QSI 004.
- 9) INSERT D2596 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP.
- 10) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- 11) USE DART DRILL TEMPLATE DT8217 & DT8937 ONLY FOR D2580-041/-045 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTIONS B-B AND F-F (50 PLACES) AFTER FINISH. INSTALL AN3C4A BOLTS AND NAS1149C0332R WASHERS WITH SIKAFLEX-241/291.
- 12) INSERT D2594-1 PLUG C/W D2594-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (16 PLACES FOR D2580-041/-045 AND 8 PLACES FOR D2580-047)
- 13) IT IS ACCEPTABLE TO GRIND A RELIEF IN THE D2855 AFT CAP TO PREVENT INTERFERENCE WITH THE SPACER AT THIS LOCATION

**RELEASED**  
2013-07-13

F	INCORPORATE DEO D2580-E-1 PER PAR12-218	DC	13.06.20
E	ADD D2580-047 (ZN C4-7) AND D2580-7 (ZN B3-8); INCLUDED DEO D2580-D-1; REFORMATTED DRAWING TO CURRENT STANDARDS; DT8217 & DT8937 WAS TD2577-205 (ZN C4-1)	RF	11.06.21
D	CHANGE TO SS WEARPLATES AND GASKETS, INCLUDE DEO 9124/ 9183	PH	07.04.05
C	REDRAWN, INCLUDED DEO 9094/ 9097	CP	98.08.26
B	AS MANUFACTURED	DS	96.12.02
A	NEW ISSUE	DS	96.09.16
REV.	DESCRIPTION	BY	DATE
DESIGN	#		
DRAWN	DC		
CHECKED	RF	DART AEROSPACE LTD	REV. F
MFG. APPR.	DD	HAWKESBURY, ONTARIO, CANADA	D2580 SHEET 1 OF 8
APPROVED	HS	DRAWING NO.	SCALE
DE APPR.	#	205 SKIDTUBE ASSEMBLY	NTS
DATE	13.06.20	COPYRIGHT © 1996 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSES OR COMBINED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

117437 MLS  
14-04-24

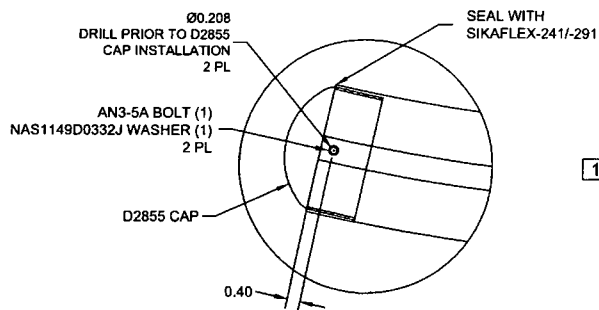
8 7 6 5 4 3 2 1



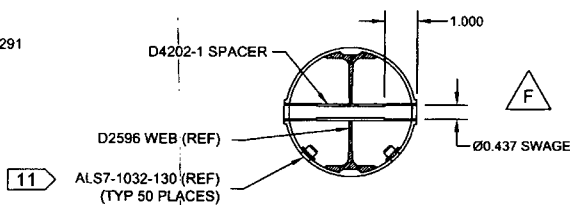
**D2580-041 ASSEMBLY DETAIL**

**RELEASED**  
2013-07-15  
WD

**DETAIL A** C7-2  
SCALE 5X

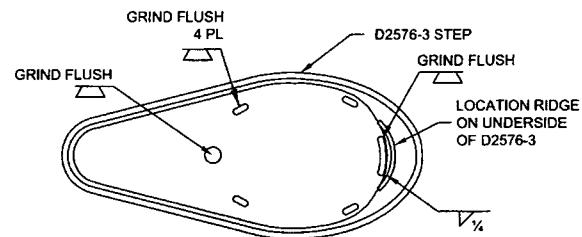


**SECTION B-B** D5-2  
SCALE 5X



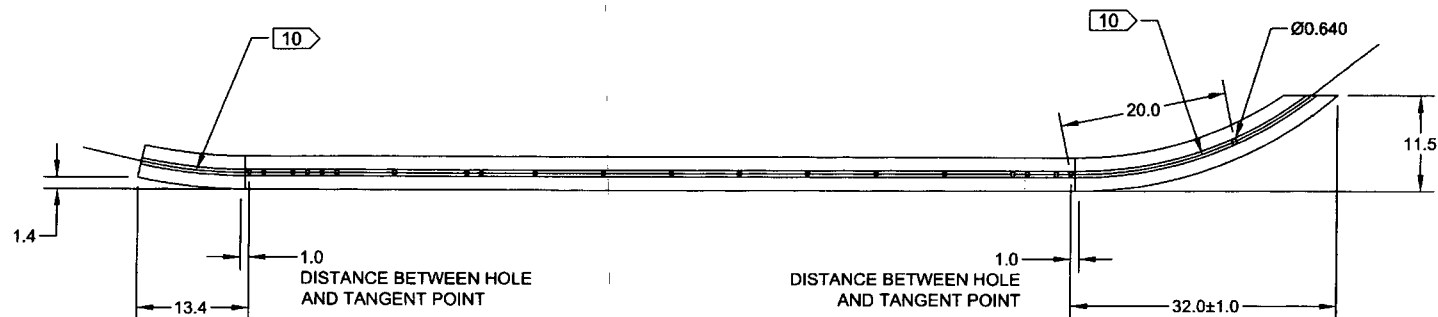
AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:  
1. INSERT D4202-1 SPACER (20 PLACES)  
2. SWAGE TO Ø0.437 X 1.00 DEEP PER QSI 002  
3. TRIM / GRIND FLUSH PER QSI 002

**DETAIL C** D3-2  
SCALE 5X



DESIGN	#	<b>DART AEROSPACE LTD</b>	
DRAWN	DC	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. F
MFG. APPR.	DD	D2580	SHEET 2 OF 8
APPROVED	HS	TITLE	SCALE
DE APPR.		205 SKIDTUBE ASSEMBLY	NTS
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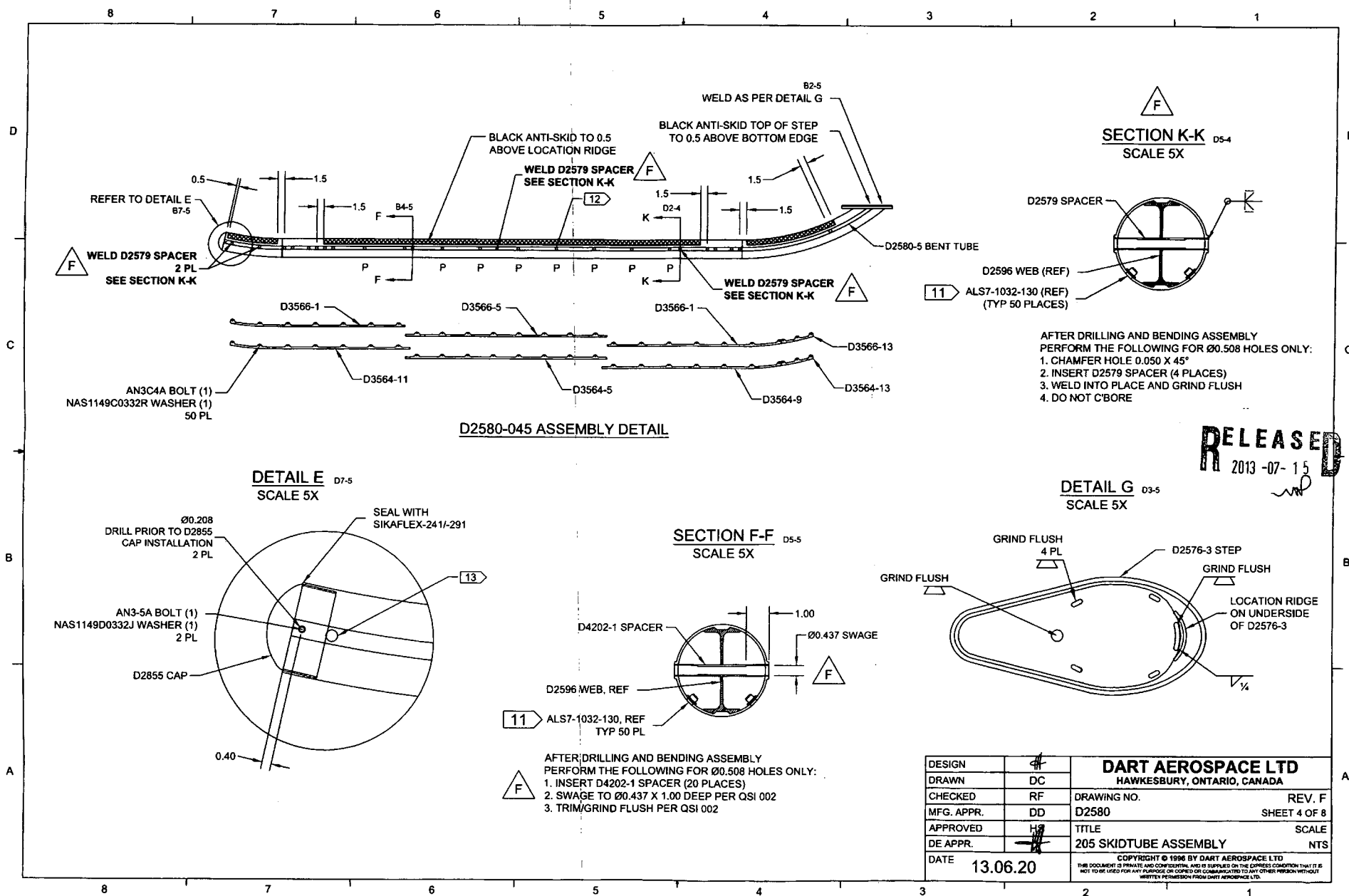
8 7 6 5 4 3 2 1



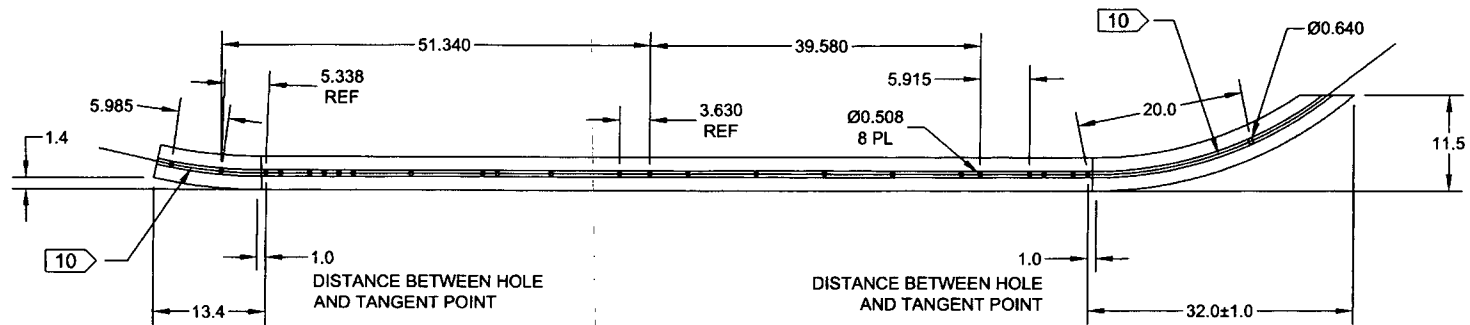
D2580-1 BENT TUBE  
(MAKE FROM D2580-101 TUBE)

RELEASED  
2013-07-15

DESIGN	<i>HS</i>	<b>DART AEROSPACE LTD</b>	
DRAWN	DC	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. F
MFG. APPR.	DD	D2580	SHEET 3 OF 8
APPROVED	HS	TITLE	SCALE
DE APPR.	<i>HS</i>	205 SKIDTUBE ASSEMBLY	
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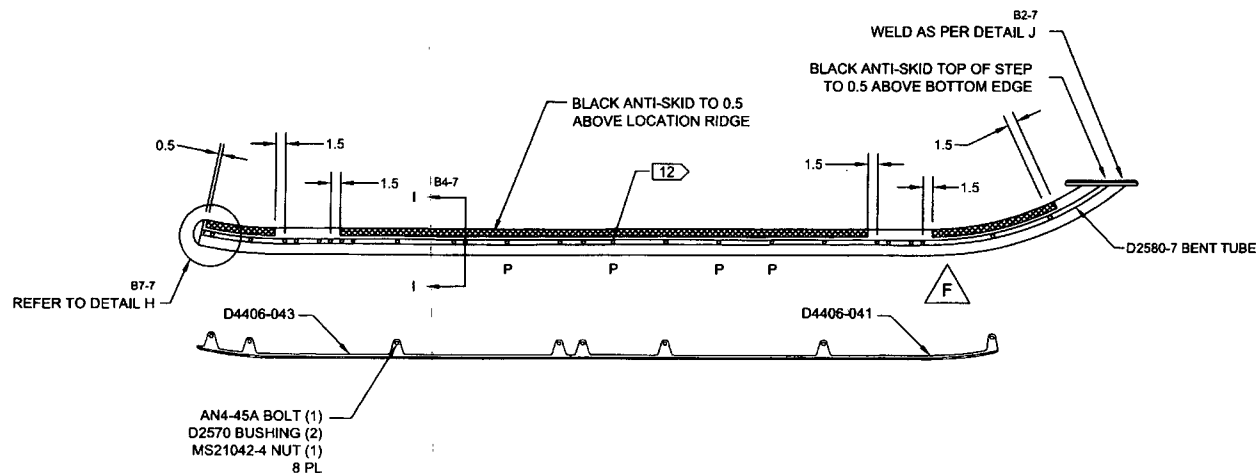




**D2580-5 BENT TUBE**  
(MAKE FROM D2580-101 TUBE)

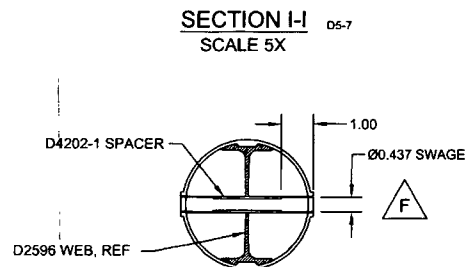
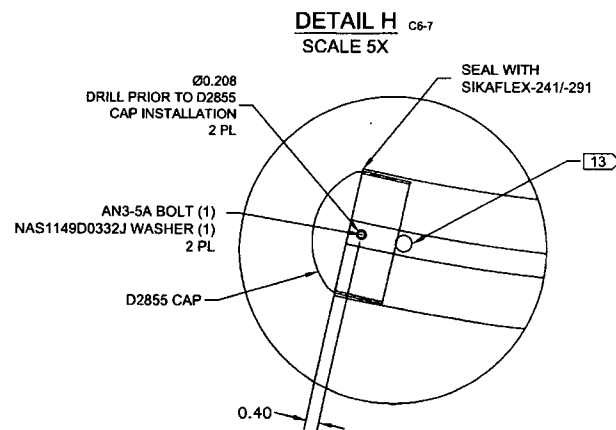
**RELEASED**  
2013-07-15  
*WP*

DESIGN	<i>HL</i>	<b>DART AEROSPACE LTD</b>	
DRAWN	DC	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. F
MFG. APPR.	DD	D2580	SHEET 5 OF 8
APPROVED	<i>HS</i>	TITLE	SCALE
DE APPR.	<i>HL</i>	205 SKIDTUBE ASSEMBLY	NTS
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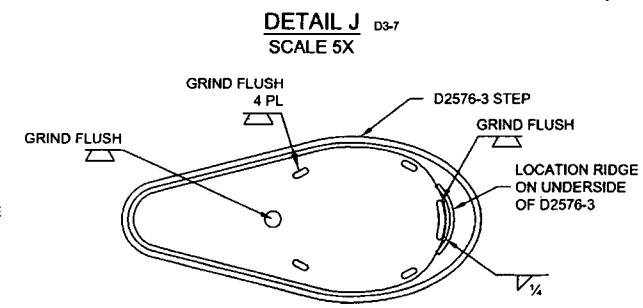


D2580-047 ASSEMBLY DETAIL

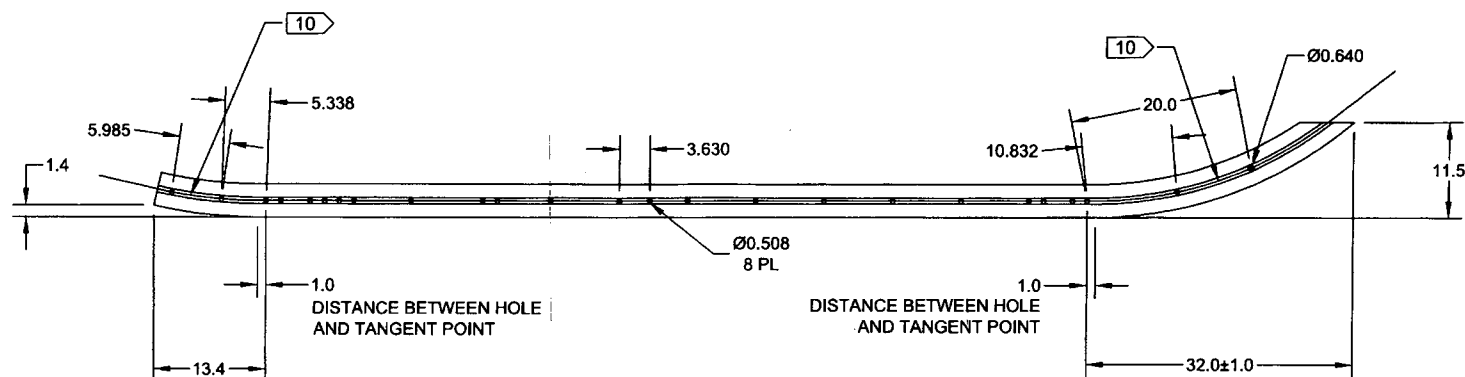
RELEASED  
2013-07-15



- △ F
- AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:
1. INSERT D4202-1 SPACER (24 PLACES)
  2. SWAGE TO Ø0.437 X 1.00 DEEP PER QSI 002
  3. TRIM/GRIND FLUSH PER QSI 002



DESIGN	#	<b>DART AEROSPACE LTD</b>	
DRAWN	DC	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. F
MFG. APPR.	DD	D2580	SHEET 6 OF 8
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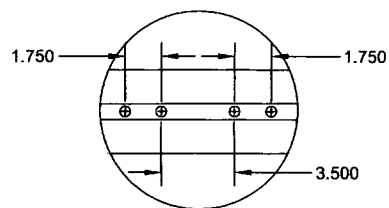
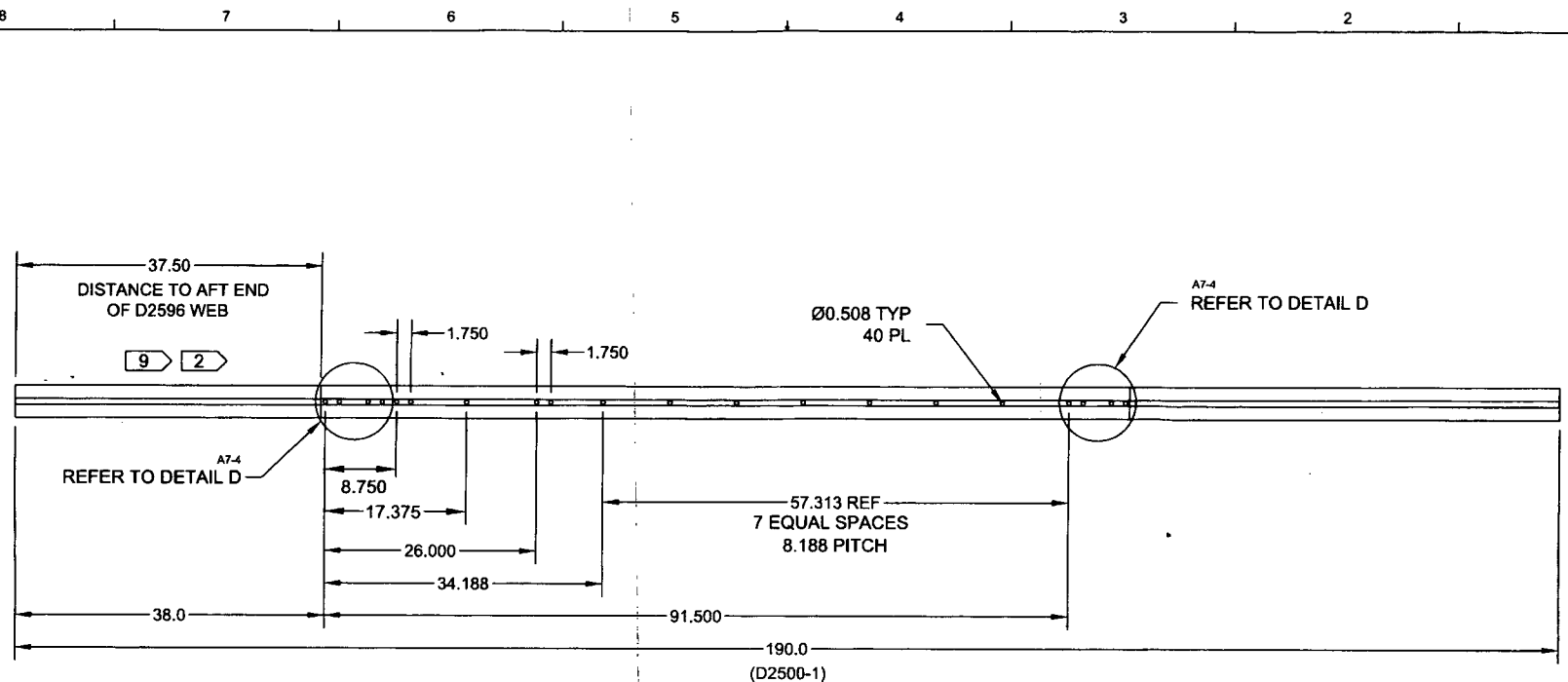


D2580-7 BENT TUBE  
(MAKE FROM D2580-101 TUBE)

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2013-07-15

DESIGN	DC	DART AEROSPACE LTD	
DRAWN	DC	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. F
MFG. APPR.	DD	D2580	SHEET 7 OF 8
APPROVED	HS	TITLE	SCALE
DE APPR.	HS	205 SKIDTUBE ASSEMBLY	NTS
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DETAIL D  
SCALE 5X  
D3-4  
C7-4

D2580-101 TUBE

RELEASED  
2013-07-15  
AMP

DESIGN	DC	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	DC	DRAWING NO.	REV. F
CHECKED	RF	D2580	SHEET 8 OF 8
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